WHAT IS CLAIMED IS:

1. A steering control apparatus comprising:

a steered wheel drive mechanism including a plurality of motors for driving a steered wheel, wherein the plurality of motors are arranged coaxially, have substantially the same performance, and are driven simultaneously;

a plurality of control means, each controlling an associated one of the motors; and

a plurality of systems configured by the plurality of motors and the plurality of control means, with the control means of one of the systems:

generating a first torque command representing torque for turning the steered wheel based on the steering position of a steering wheel and position information of the motor associated with the one of the systems;

distributing the first torque command in accordance with the number of the systems to generate one or more divided torque commands, each of the one or more divided torque commands being providing to an associated one of the systems; and

controlling the torque of the associated one of the motors in accordance with the distributed torque command distributed to the one of the systems; and

the control means of at least a further one of the systems:

controlling the torque of the associated one of the motors in accordance with the distributed torque command distributed to the at least one other system.

2. The apparatus according to claim 1, wherein each of the systems further includes an impairment detecting

means for detecting impairment of the system, and when one or more of the systems, including said one of the systems generating the first torque command, is impaired, the control means of one of the systems that is functioning normally:

generates a second torque command representing torque for driving the steered wheel based on a steering position of the steering wheel and position information of the associated one of the motors;

generates one or more distributed torque commands from the second torque command in accordance with the number of the systems that are functioning normally, each of the distributed torque commands generated from the second torque command being provided to an associated one of the systems that is functioning normally; and

controls the torque of the associated one of the motors in accordance with the distributed torque command distributed to said one of the systems that is functioning normally; and

the control means of at least a further one of the other systems that is functioning normally controls the torque of the associated one of the motors in accordance with the distributed torque command distributed to the at least a further one of the systems functioning normally.

3. The apparatus according to claim 1, wherein each of the systems further includes an impairment detecting means for detecting impairment of the system, and when one or more of the systems, excluding said one of the systems generating the first torque command, are impaired, the control means of said one of the systems:

generates the one or more distributed torque

commands from the first torque command in accordance with the number of systems that are functioning normally, each of the one or more distributed torque commands being provided to an associated one of the systems that is functioning normally;

controls the torque of the associated one of the motors in accordance with the distributed torque command distributed to said one of the systems; and

the control means of at least a further one of the systems that is functioning normally controls the torque of the associated one of the motors in accordance with the distributed torque command distributed to said at least a further one of the systems functioning normally.

4. The apparatus according to claim 2, wherein controlling the torque of the associated one of the motors includes feedback controlling excitation current of said associated one of the motors, each of the control means having a different current loop gains for the feedback controlling when each of the systems is functioning normally and when one or more of the systems is impaired.

5. The apparatus according to claim 3, wherein controlling the torque of the associated one of the motors includes feedback controlling excitation current of said associated one of the motors, each of the control means having a different current loop gains for the feedback controlling when each of the systems is functioning normally and when one or more of the systems is impaired.

6. A steering control apparatus for a vehicle having a steering wheel and a steered wheel, the apparatus comprising:

a plurality of motors for turning the steered wheel, the plurality of motors having substantially the same performance;

a plurality of control units capable of mutual communication, each of the control units controlling an associated one of the motors, the control units and the motors forming a plurality of systems, wherein each control unit executes mutual communication and determines whether the corresponding system is normal or impaired; and

a steering sensor for detecting the operating angle of the steering wheel;

wherein, when each of the systems is operating normally, one of the control units:

generates a torque command representing torque required to turn the steered wheel in accordance with the operating angle detected by the steering sensor;

distributes the torque command in accordance with the number of the systems to generate a plurality of distributed torque commands; and

provides each of the distributed torque commands to an associated one of the systems; and

each of the control units controls the associated motor in accordance with the associated distributed torque command.

7. The apparatus according to claim 6, wherein, when each of the systems is operating normally, said one of the control units generates the distributed torque commands, the number of which is equal to the number of systems, and the motors are driven with mutually equal torques in accordance with the distributed torque commands.

8. The apparatus according to claim 6, wherein the

plurality of motors includes at least a first motor and a second motor, the plurality of control units includes at least a first control unit for controlling the first motor and a second control unit for controlling the second motor, and the plurality of systems includes at least a first system containing the first motor and the first control unit and a second system containing the second motor and the second control unit, said one control unit being the first control unit;

wherein, when one or more systems, including the first system, is impaired, and one or more systems, including the second system, is operating normally:

the first control unit stops generating and providing the torque command and the distributed torque commands in addition to stopping the first motor; and

the second control unit:

generates the torque command representing torque required to turn the steered wheel in accordance with the operating angle detected by the steering sensor;

divides the torque command into a number equal to the number of said one or more normal systems to generate one or more of the distributed torque commands; and

provides the one or more distributed torque commands to said one or more normal systems; and

each of the control units corresponding to said one or more normally operating systems drives the associated motor in accordance with the associated distributed torque command.

9. The apparatus according to claim 8, wherein when the second system alone is said one or more normally operating systems, the torque command and the distributed

torque command are the same.

10. The apparatus according to claim 8, wherein said steering sensor is one of a plurality of steering sensors, each connected to an associated one of the control units, said steering sensor being connected to the second control unit.

11. The apparatus according to claim 6, wherein the plurality of motors includes at least a first motor and a second motor, the plurality of control units includes at least a first control unit for controlling the first motor and a second control unit for controlling the second motor, and the plurality of systems includes at least a first system containing the first motor and the first control unit and a second system containing the second motor and the second control unit, with said one control unit being the first control unit; and

when one or more systems, including the first system, is operating normally, and one or more systems, including the second system, is impaired, the first control unit generates:

a torque command representing a torque required to turn the steered wheel in accordance with the operating angle detected by the steering sensor; and

divides the torque command into a number equal to the number of said one or more normally operating systems to generate one or more of the distributed torque commands; and

provides the one or more distributed torque commands to said one or more normally operating systems;

each of the control units corresponding to said one or

more normally operating systems drives the associated motor in accordance with the associated distributed torque command.

12. The apparatus according to claim 11, wherein when the first system alone is said one or more normally operating systems, the torque command and the distributed torque command are the same.

13. The apparatus according to claim 11, wherein said steering sensor is one of a plurality of steering sensors, each connected to an associated one of the control units, said steering sensor being connected to the first control unit.

14. A steering control method for a vehicle having a steering wheel, a steered wheel, and a plurality of motors having substantially the same performance for turning the steered wheel, the method comprising:

detecting the operating angle of the steering wheel;

generating a torque command representing torque required for turning the steered wheel in accordance with the operating angle;

dividing the torque command to generate a plurality of distributed torque commands, each associated with one of the motors; and

controlling the motors in accordance with the distributed torque commands.

15. A steering control method for a vehicle having a steering wheel, a steered wheel, a plurality of motors mutually having substantially the same performance for turning the steered wheel, and a plurality of control units,

each controlling an associated one of the motors, the motors and the control units forming a plurality of systems, wherein the systems include a first system containing a first motor and a first control unit for controlling the first motor and a second system containing a second motor and a second control unit for controlling the second motor, the method comprising:

checking whether or not the systems are operating normally;

detecting an operating angle of the steering wheel;

driving the motors in accordance with the operating angle, said driving including when the systems are operating normally:

generating a torque command representing torque required with the first control unit to turn the steered wheel in accordance with the operating angle;

dividing the torque command with the first control unit to generate a plurality of distributed torque commands, each corresponding to an associated one of the motors; and

controlling the motors with the first control unit in accordance with the distributed torque commands; and

when one or more of the systems including the first system are operating normally and one or more systems including the second system are impaired:

stopping the motor associated with each control unit corresponding to said one or more impaired systems;

generating the torque command representing torque required to turn the steered wheel with the first control unit in accordance with the detected operating angle;

dividing the torque command into a number equal to

the number of the systems that are normal with the first control unit to generate one or more distributed torque commands;

providing the one or more distributed torque commands to an associated one of each of the one or more normal systems with the first control unit; and

driving the associated motor in accordance with the associated distributed torque command with each of the control units corresponding to the at least one normally operating system; and

when one or more of the systems including the first system are impaired and one or more of the systems including the second system are operating normally:

stopping the motor associated with each control unit corresponding to said one or more impaired systems;

generating the torque command representing torque required to turn the steered wheel with the second control unit in accordance with the detected operating angle;

dividing the torque command into a number equal to the number of the systems that are normal with the second control unit to generate one or more distributed torque commands;

providing the one or more distributed torque commands to an associated one of each of the one or more normal systems with the second control unit; and

driving the associated motor in accordance with the associated distributed torque command with each of the control units corresponding to the at least one normally operating system.